

IN THE SPECIFICATION

Please cancel paragraphs 9 and 25-28.

Please replace paragraph 10 with the following amended paragraph.

~~Figure 5~~Figure 4 is a diagram showing an embodiment of a system for reducing radiation dosage and showing effects of the system.

Please add the following paragraph between paragraphs 10 and 11.

Figure 5 is an isometric view of an embodiment of a collimator included within the system of Figure 4.

Please replace paragraph 29 of the specification with the following amended paragraph.

~~Figure 5~~Figure 4 shows an embodiment of a system 120 for reducing radiation dosage. System 120 includes x-ray source 14 at a focal point 60, a collimator 122, and detector array 18. An isometric view of an embodiment of collimator 122 is shown in Figure 5. Collimator 122 is contoured in a direction along a y-axis. Collimator 122 includes a plurality of cams 123 that are driven linearly along the z-axis to produce apertures of various sizes, such as widths. ~~Aperture~~Referring back to Figure 4, aperture 124 is an example of an aperture formed by the cams 123 of collimator 122. Prior to scanning, the cams 123 are driven to a pre-set position by a linear drive mechanism, such as a screw, to form a pre-set aperture between the cams. To change a size of the pre-set aperture during a scan, a piezo-electric drive mechanism is used to position the cams 123.

Please replace paragraph 30 of the specification with the following amended paragraph.

X-ray source 14 transmits x-ray beam 16 towards collimator 122. Collimator 122 collimates or restricts x-ray beam 16 to generate a collimated beam 126. Collimated beam 126 falls on detector elements 20 and generates an x-ray beam profile 128. X-ray beam profile 128 is a projection of collimated beam 126. Curvature of x-ray beam profile 128 is minimal for all sizes, such as widths, of apertures formed by the cams 123 of collimator 122.

Please replace paragraph 31 of the specification with the following amended paragraph.

A radius of curvature of collimator 122 is proportional to a radius of curvature of detector array 18. As an example, a radius of curvature of detector array 18 at a point 130 is $x+y$ centimeters (cm), where x is a radius of curvature of collimator 122 at a distance 132 from focal point 60, and where x and y are real numbers greater than zero. In this example, a radius of curvature of detector array 18 at a point 134 is $m+y$ cm, where m is a radius of curvature of collimator 122 at a distance 136 from focal point 60, and where m is a real number greater than zero. A radius of curvature of collimator 122 and detector array 18 is measured from focal point 60. ~~Unlike distances 80 and 84, distance~~Distance 132 is approximately equal to distance 136 because a contour of collimator 122 matches a contour of detector array 18.

Please replace paragraph 35 of the specification with the following amended paragraph.

In yet another alternative embodiment, blade 154 includes a slit 166 or an aperture having a small width through which x-ray beam 16 passes to form an x-ray beam profile on detector array 18. An example of an aperture with a small width is an aperture whose x-ray beam profile has a width of approximately 1 mm on detector array 18. Alternatively, ~~cam 152~~blade 152 includes slit 166.

Express Mail Label No. EV335793286US

136122CT
PATENT